CHAPTER X

MAINTENANCE

Chapter Index

PROPERTY MAINTENANCE AND UPDATING

Title 35, Part VI, Subpart 02, Chapter 06, Mississippi Administrative Code requires that each county estimate the true value of all real property in its jurisdiction as of the value date of January 1 of the year of the upcoming land roll. "True value shall mean and include, but shall not be limited to, market value, cash value, actual cash value, proper value and value for the purposes of appraisal for ad valorem taxation." Mississippi Code Ann. 27-35-50-(1)

Field personnel should be alert for building changes (new construction, deletions, etc.) as they perform maintenance of the real property. All property record cards (PRC) should be field checked annually for this purpose. Building symbols with proper labeling on the field maps will assist field personnel in locating all improvements on a parcel. The location of improvements and a proper method of checking the PRC are essential to an adequate maintenance program.

The county should annually prepare new, add to, or change the PRC as to any errors, omissions, deletions, or additions that reflect the accurate true value of all land and improvements that the county is required to appraise. New structures will need to be treated as a complete appraisal; however, additions, conversions and alterations need to be treated differently.

As an assessor's office receives copies of building permits, property record cards are flagged and inspections scheduled. While some counties have both city and rural building permit systems in place, there are other means of capturing improvement changes. If your county does not have a building permit system, use all resources possible in addition to a physical inspection of all properties. A county must physically observe, check condition of improvements and note on property record cards the date of observation.

Preparing for maintenance in your county involves more than just the appraisal of property. Many other activities are involved, the most important being management. A Tax Assessor must manage both personnel and materials. Most needed materials include maps, property record cards, and a current Department of Revenue Appraisal Manual. Additionally the county should prepare new, add to, or change property record cards as to any errors, omissions, deletions, or additions as required reflecting accurate true value of all land and improvements required to be appraised in accordance with current Department of Revenue guidelines.

All counties should rely upon the market transactions that have occurred in their county in order to determine current land values as well as the construction of a new building index. A county should accomplish various functions of an update/maintenance program in accordance with Department of Revenue (DOR) rules and regulations.

When your county begins the maintenance program, the logical method is to provide the field appraiser with an effective and systematic way to accomplish the fieldwork. When field employees start maintenance in collecting field information, it is important to arrange maps and property record cards that will be geographic in nature.

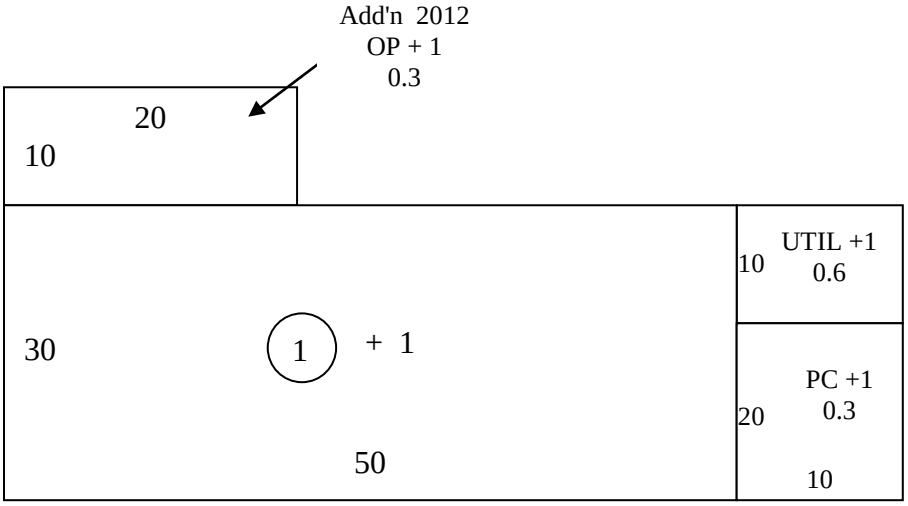
An index map is important in determining what a county has completed and what they have to accomplish in order to meet deadlines for the upcoming tax roll. You may want to use a subdivision method or a quarter section method. The purpose of a geographical property record system is to make certain that all land (and therefore all parcels) is accounted for. If data collection is

systematically performed, area-by-area, any missing or overlooked property should be discovered.

Please remember that during annual maintenance all changes made to the property should reflect the change on the property record card. Do not delete what is on the card. Line through the old part and mark plainly what the area is now. In complying with the four-year update cycle, a county must physically observe, check condition and initial the property record card as to the date of physical observation. One hundred percent (100%) of all parcels in your county shall be closely observed within a four-year period.

Additions

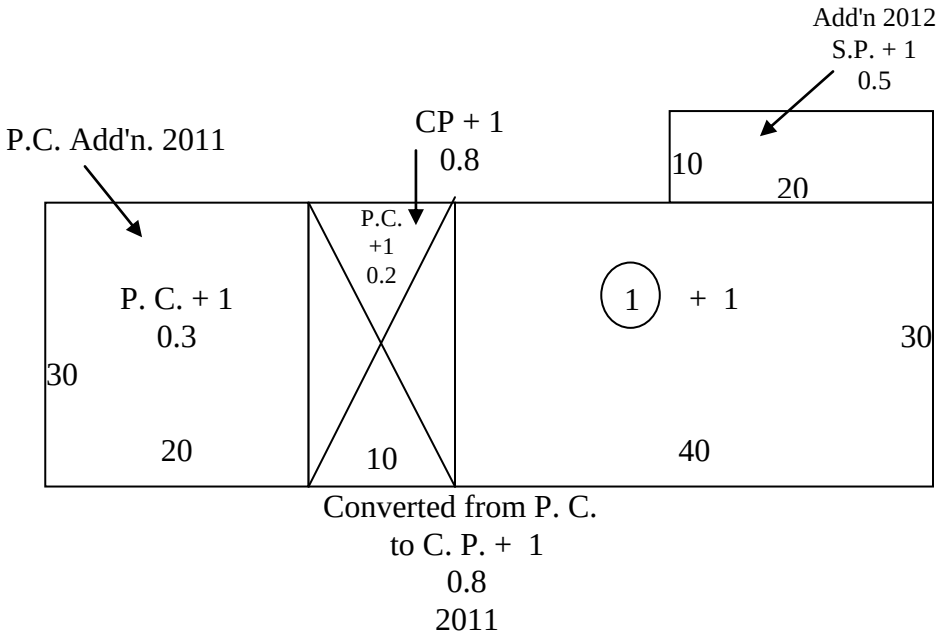
This refers to any new construction added to a structure. Care must be taken in putting these added areas to the main structure because of quality of the construction. If the construction is of lesser quality, then you must use a percentage rather than the full rate per square foot. When large additions are added to houses, it is generally better to recalculate the house, using the larger area for base area. In this case, it may be necessary to adjust the condition of the house also. This will have to be marked plainly so that the processor will know what to do. Be sure to mark all additions on drawings as addition of 2012 or whatever year it may be.



Conversions

A conversion is any previously percentaged area of a residential structure that has been altered in any way so as to change the percentage assigned to it. Do not delete what is on the card. Line through the old part and mark plainly what the area is now.

Example:



Whether in-house certified appraisers or appraisal contractors perform your county's maintenance, the primary goal is to reach a fair and equitable distribution of the tax burden for the taxpayers in your county.

When the Tax Assessor and County Board of Supervisors prefer to use contractors, it is their responsibility to ensure the contractor is complying with all standards and minimum requirements set forth by the Department of Revenue's Property Tax Bureau.

Section 27-35-113, Miss. Code Ann., provides that the Department of Revenue shall establish performance standards of the accuracy of ad valorem assessments. As previously discussed, you will note that the Department of Revenue shall, by regulation, establish performance standards and acceptable parameters for evaluation of the accuracy of assessments. These standards shall include, but not be limited to, the following:

A. Assessment level: the ratio of assessments to current true value or market value
B. Assessment uniformity: the test of uniformity or fairness of individual assessments
C. Assessment equity: the test of price-related bias

Statute requires that each County Tax Assessor shall maintain a current sales file. A sales file is the backbone in determining valid indicators of market value. The market approach utilizes the actual selling price of properties as an indicator of value.

ASSESSMENT/SALES RATIO STUDY

The Department of Revenue envisions an ad valorem assessment landscape which ensures the equitable treatment of all property within the constitutional framework. The principles of statistics are utilized to fairly and accurately interpret data required to uphold the constitution and statutes of the State.

According to the Miss. Code Ann., 27-35-50-(5) ("the true value of each class of property shall be determined annually"), counties are responsible for assessment of property on a local basis and must keep the values current as of January 1 of each year. The MS Administrative Code requires that assessors complete property reviews on a four-year cycle. In order for the values to be current a county should collect sales information and conduct a sales ratio study each year. A sales ratio is the relationship of the appraised (land roll) value of a property to the market sales price of that same property.

Studies of the ratios in a county can serve an assessor in several ways. They can be used to monitor assessment performances by showing the overall level of assessment and the degree of dispersion around that level. Secondly, they are a very helpful appraisal tool and can be used to show the need for a general reassessment or, better still, which neighborhoods or classes of properties are most in need of reassessment. Assessment/sales ratio studies also allow the assessor to anticipate labor and training needs along with budget requirements. They are one of the most useful tools available to local and state governments and to the assessor in particular.

The findings of a ratio study can only be as accurate as the data used in the study. When performing sales ratio studies county personnel should be proficient in the principles and practices of real estate appraisal, aware of the current real estate market, and familiar with conveyance practices in the area. They will be required to collect, confirm, screen and adjust sales data in order to perform valid ratio studies.

It should be emphasized that without adequate sales information it is virtually impossible to accomplish the objectives mandated by the statutes and to comply with statistical measures of performance adopted by the Department of Revenue. The level of assessment and the uniformity within each county must comply with the standards set forth in the MS Administrative Code. The DOR may order a county to take corrective action in the case of non-compliance.

Gathering Sales Information

The best source of information regarding real estate sales is usually the seller (grantor) and the buyer (grantee).

The statistics used by the DOR begin with a defined population, i.e. a given county. A simple random sample of the population is used to conduct a sales ratio study. A study is said to be random if each parcel from the population has an equal chance of being included in the sample selection. Sales information is the key to achieving equalization; therefore, a good sales file is essential for every assessor.

Central to conducting an analysis of the relationship between market value and appraised value is the collection and usage of data, particularly data on properties that have recently been sold. Since the selling price of a property is usually a close approximation of the market value of that property, information on recent sales can be used as the data necessary for determining the market values of the mass of properties within a jurisdiction. Thus, sales data collection is the cornerstone of the mass appraisal process. The key to keeping values in a county current is to collect as much sales data as possible. Data, the collection of factual information, is drawn from the study of each individual sale from the sample of the population. Well-organized and accurate sales information is essential in a successful assessment system. Data from sales must be valid arms-length transactions. Arms-length transactions are sales between knowledgeable sellers and knowledgeable buyers, neither acting under duress.

1. Real Estate Transfer Documents (Warranty Deeds)

Deeds are probably the best source of sales information. A system to capture all of the deeds recorded in the county is a very essential step in maintaining and keeping an appraisal system current. Keeping an up-to-date sales file is critical in accomplishing this task.

2. Sales Questionnaires

The sales questionnaire is an inexpensive and effective means of gathering sales information and should be the **primary source** of sales information. It is used to confirm and validate particulars of the grantor/grantee's real estate transaction. The questionnaire should be kept to one page requesting the necessary information in as brief and concise a manner as possible. This will increase the likelihood of the grantor/grantee completing the questionnaire. A signed cover letter (request) from the county assessor on official stationery requesting the respondent's assistance should accompany the questionnaire. The letter and the questionnaire should be neat, clear, and courteous. The request should state the time frame in which the questionnaire is to be returned. In general, a short turnaround time (fifteen days or less) is desirable. References to Statutes 27-1-21 and 27-1-23 of the MS Code should be included with all requests for sales information. The request also should include the phone number and name of someone whom the respondent can contact should he/she have any questions. Also a self-addressed, postage-paid envelope should be included in the mailer to facilitate the process.

3. Third Party Sources

Other sources of sales information include real estate brokers and agencies, multiple listing services (MLS), title companies, government and private fee appraisers, building contractors, land developers, banks, and attorneys. Information from these sources can be used to validate information obtained from sales questionnaires but should not be the sole or primary source of data. The primary advantages of obtaining sales information from these third-party sources are quickness and efficiency. In addition, these sources are generally knowledgeable about market conditions and can be very helpful in explaining why a property has sold for a given price.

The primary disadvantage of using third-party sources is that the information is generally spotty, incomplete, and not organized in a format suited to the assessor's needs. While a broker or banker may be willing to discuss the terms of one or several individual transactions, he/she may not want to go into detail on all transactions that cross his/her desk. Also, each and every sale in a county should

have ample opportunity to be used in a sales ratio study. The MLS does not include all sales, nor does it provide information needed to qualify real estate sales for use in a ratio study.

In any case, the assessor should try to obtain as much information from these third-party sources as possible. In some jurisdictions their cooperation will be more crucial than in others. If the assessor is not obtaining adequate sales price information from real estate transfer deeds, sellers (grantors) and buyers (grantees), or other sources, he/she should personally contact these various third-party sources, explain the situation, and try to arrange for the orderly sharing of sales data.

4. Homestead Exemption Applications

The assessor's office has a very vital source of sales information in the homestead exemption applications. Homestead exemption applications by law must be filled out completely with all the facts about the price of the acquisition being sworn to by the applicant. Information listed on the application must be carefully considered and verified. Homestead exemption applications may be used as verification of sales data obtained from sales questionnaires; however, as with multiple listing services, they should not be the sole or primary source of information.

5. Telephone

The telephone, like the sales questionnaire, can be an inexpensive and effective means of gathering sales information from buyers and sellers. It has two primary advantages over the sales questionnaire. First the time factor and secondly, it establishes personal contact between the assessor's office and the taxpayer. Besides the public relations value, this enables the caller to clarify immediately any questions that may arise with respect to the transaction. This is particularly advantageous with income-producing properties that often involve complicated financial arrangements and substantial amounts of personal property.

However, there are several disadvantages when gathering sales information by telephone. First, the caller has no proof that he/she represents the assessor's office. Secondly, telephone contact can involve a good deal of professional staff time. Telephone interviewers should have experience and be well trained. In addition, it can often be time consuming and frustrating simply to contact the appropriate individual. Thirdly, there is no signed confirmation as to the accuracy of the information.

6. Personal Contact

Personal contact is another means of obtaining sales information from buyers and sellers. Provided that the person can be reached, a personal visit is the surest and most effective means of obtaining the desired information. People are less likely to refuse a request for information made in person than a request made over the phone or by mail. The personal visit also affords the interviewer the opportunity to confirm that the information maintained on the property record card (improvement characteristics) is correct. A personal visit is particularly useful with commercial, industrial, and farm properties in which the transaction often involves a good deal of personal property or is otherwise difficult to analyze. In addition, the personal call can have a public relations value if it is conducted in a courteous and professional manner.

Recording Sales

The next step after gathering the information is to introduce the information into a uniform system of record keeping. The sources of the sale information should be filed in a neat and orderly manner. All land (vacant and/or improved) values should be posted to sales maps for use in developing a small tract schedule and urban land prices.

Sales data can come from many sources. Sources of sales data that can assist the decision-making process include but are not limited to

1. Real Estate transfer documents (qualified warranty deeds)
2. Questionnaires and interviews with buyers and sellers
3. Bankers
4. Real Estate Sales Personnel and Brokers
5. Multiple Listing Services
6. Fee Appraisers
7. Homestead Applications

SALES TO BE RECORDED ON THE RATIO STUDY QUESTIONNAIRE FORMS

1. The period of sales, which will be used, is usually from JANUARY 1st through DECEMBER 31st of each year.

2. Only proper warranty deeds are to be considered as valid deeds of transfer for this study. Quit Claim deeds, Trustee's deeds, deeds conveying a patent, sheriff's deeds, and similar types of deeds are not considered valid for this study.

3. Warranty deeds conveying rights-of-way, timber or minerals, partial interests, or similar rights are not considered valid.

4. Other deeds which CANNOT be considered in a ratio study are:

    A. Deeds executed, (notarized) prior to January 1st or after December 31st of the study year.

    B. Sales between parties of the same family name, sales between known relatives, and sales where the consideration recites the phrase "For love and affection."

    C. Sales between known corporate affiliates or between a corporation and its subsidiary, a corporation and its stockholders, or two corporations having the same ownership.

    D. Sales of cemetery lots.

    E. Sales involving real estate in more than one county.

    F. Sales to or by administrators, executors, guardians, receivers, or trustees.

    G. Sales to or by mortgage companies, financial institutions, or insurance companies.

    H. Sales by the tax collector, the sheriff, or other court or county officials, forced sales such as bankruptcy sales, condemnation sales, receiver sales, eminent domain or other government forced sales.

    I. Sales to or by any church, lodge, school or other benevolent, fraternal, or educational institution or organization.

J. Sales to or by any railroad, telephone, electric, gas, pipeline or other utility company or public service company.

K. Sales to or by any city, town, school district, road district, drainage district, levy district, or by any county or state, or by any other governmental body.

L. Sales in which personal property is included but the specific price for such personal property is not stated.

M. Sales involving a trade or exchange of real or personal property.

N. Sales where interests such as life estate are retained.

O. Sales conveying an unspecified, undivided, or fractional interest in property.

P. Sales in which possession of the property is stated in the deed to be retained by the seller for a period in excess of one year.

Q. Sales made by use of a "contract for sale" and the contract are dated prior to the beginning of the study period.

R. Transfers to correct defects in title or to accomplish technical changes in character of title such from tenancy in common to joint tenancy by use of a third party.

Deeds falling in the above categories should be easily recognized from the deeds themselves; the following types of sales should be recognizable from the assessor's records.

* S. Sale where property sold vacant and the assessor's records show a subsequent improvement.

* T. Sale of improved property and the assessor's records show the property to be vacant.

* NOTE: These situations should be carefully investigated to determine if there has actually been a change in the status of the property or if the assessor's records are not being properly maintained.

INSTRUCTIONS FOR COMPLETING RATIO STUDY QUESTIONNAIRES

1. The following information for each transaction examined shall be shown in the appropriate place on the Ratio Study Questionnaire. All information on the sheet should be completed; no item should be left blank. Following all of the steps listed below should remove the possibility of omitting an item.

   A. Enter the grantor's name, address, and phone number. Be sure to show the full name or names exactly as they are shown on the deed. If the address is not shown on the deed you will have to obtain this information from other sources such as the telephone book, city directory, tax assessor's office, the attorney who prepared the deed, etc. NOTE: The law now requires that the mailing address and telephone number of both the grantee and the grantor be shown on the deed at the time of recording.

   B. Enter the grantee's name, address, and phone number following the same procedure as for the grantor.

   C. Enter the deed book number of the warranty deed book from which you are extracting the deed information. Enter the page number of the first page of the deed you are recording.

   D. Enter the type of deed. (This will usually be W D, for Warranty Deed.)

   E. Enter the deed date (sale date).

   F. Enter the date that the deed was recorded.

   G. Enter the indicated sales price, (if shown on the deed).

   H. Enter the legal description. The description that you enter **DOES NOT** have to be identical to that in the deed. It **DOES**, however, have to be complete and accurate enough to allow someone else to identify the parcel in question on the various records. You should also show the acreage quoted in the deed or the dimensions quoted if there are any.

   I. You should also record any other information about the property that you are able to obtain in the legal description section.

   J. If the map, block, and parcel number are given on the deed, be sure to note it on the questionnaire.

2. The following steps are to be followed in completing the section of the questionnaire labeled "APPRAISAL AND LAND ROLL INFORMATION." The same caution in following all steps should be used in order to avoid missing information.

   A. Enter the parcel number.

   B. The information for section, township, and range may be omitted if the legal description is sufficient to locate the property without it. Caution should be used, however, if these items are omitted.

   C. "Roll Year" should indicate from which year's land roll the values are to be obtained.

   D. The section following the parcel number and roll year is for appraisal and/or assessment information. Place a check (or an X) in the appropriate boxes for property class and source of information. Enter the land value, improvement value, and total value of the parcel. Note: Be sure to indicate if property is Class I or Class II.

   E. The section for property type is extremely important. This section will determine the category in which the parcel will be placed for analysis. Please be sure that the boxes you check are correct. In case of multiple-use property, check the predominate use and make a note that the property is multi-use.

   F. Indicate if the parcel is given agricultural use value, even if there is only part of it receiving use value assessment.

Examples of a signed cover letter (request) and a three-part sales questionnaire are on the following four pages.

YOUR COUNTY LETTERHEAD
YOUR COUNTY TAX ASSESSOR
ADDRESS
CITY, STATE AND ZIP CODE
PHONE NUMBER/FAX NUMBER

Date

Dear Property Owner:

Mississippi State statutes require that the county assessors are to determine fair market value of all property in their respective county. In order for our records to be as accurate as possible in estimating market value, Mississippi State Law requires this office to gather and record any and all data and information needed to value properties subject to assessment.

Mississippi Annotated Code 27-1-21

The assessor shall have the right and power and it shall be his duty to inquire into the purchase price paid for any property, real or personal. . .

Mississippi Annotated Code 27-1-23

The county and municipal tax assessor in person, or by deputy, shall have the right, power and authority and it shall be his duty to inquire of the property owner an inspection of his books and accounts, papers, memoranda and records, and he shall have the right to examine in full the same . . . . Such assessors shall have the right and power to inquire into and ascertain the insured value of any and all property, or into the value at which the same has been insured previously and to ascertain the amount of fire insurance carried on any and all property . . . . In the performance of the duties and in the exercise of the powers herein vested in and imposed upon the tax assessor, such assessors and their deputies shall have the authority to enter during reasonable hours, the premises . . . .

Publicly recorded documents indicate that you were involved in a recent real estate transaction, most likely through the purchase or sale of real property. Please complete the enclosed Sale Verification Questionnaire. Your response within 15 days will be greatly appreciated. The information that you provide will be held and used by this office to assist in maintaining accurate and uniform assessments. For your convenience in returning this questionnaire, we have also enclosed a stamped, self-addressed envelope. If you have any questions, please do not hesitate to contact my office at (000) 000-0000. Thank you in advance for your attention and rapid response in this matter.

Respectfully,

Your County Tax Assessor

County Name No. Roll Year

Sale No. Sequence No. _____

Mississippi Department of Revenue

Ratio Study Questionnaire

Data Collection Form

Section I

Grantor (Seller)
Street Address

Telephone

Grantee (Buyer)
Street Address

Telephone

Deed Book Page Type Deed Date Date Recorded

Legal Description

Acreage or Dimensions: Parcel / PPIN

Section II (Appraisal and Land Roll Information)

Parcel # _____ Sec. ____ Twp. ____ Rge. ____ Roll Year _____

Property Class ☐ Class I ☐ Class II Source of Information: ☐ Land Roll ☐ P. R. C.

Land Value $ _____ Improvement Value $ _____ Total Value $ _____

Property Type ☐ Res. ☐ Comm. ☐ Indust. ☐ Unimp. ☐ Imp. ☐ Urban ☐ Suburb. ☐ Rural

Use value given? ☐ Yes ☐ No Use Code _____

Section III (Verification)

Source of Information: ☐ Grantor ☐ Grantee ☐ Supplemental Appraisal ☐ Other

Data Collector Notes: _____

County Name No. Roll Year

Sale No. Sequence No.

Mississippi Department of Revenue
Ratio Study Questionnaire
Data Collection Form

Section I

Grantor (Seller)
Street Address Telephone

Grantee (Buyer)
Street Address Telephone

Deed Book Page Type Deed Date Date Recorded
Legal Description

Acreage or Dimensions: Parcel / PPIN

1. What was the EXACT selling price? $ _____
2. How much downpayment was paid? $ _____
3. Was any special financing involved which affected the amount of the selling price? If yes, please indicate below.
   For example: ☐ Owner financing ☐ Mortgage assumption ☐ FmHA Other: _____
4. If there was a realtor involved in the transaction, who was the realtor? _____
5. Were the buyer and seller related in any way? ☐ Yes ☐ No
6. Did the selling price include any buildings? (house, barns, etc.) ☐ Yes ☐ No
   (If yes, please estimate the value of the buildings and the value of the land: $ _____ Building Value $ _____ Land Value
7. Was any personal property, such as machinery, equipment, vehicles, etc., included as a part of the selling price? ☐ Yes ☐ No
   If yes, what was the estimated value of all personal property involved? _____
8. Were there any special circumstances about the sale which suggest that the price paid for the property was either more or less than its fair market value? If yes, please explain: _____
9. What is the primary use of this property? ☐ Residence ☐ Commercial ☐ Farm ☐ Other _____

PLEASE READ: The laws of the State of Mississippi require the Department of Revenue to verify sales data regarding transfers of real estate. The data provided must be true, correct, and complete to the best of your knowledge and belief under penalty of perjury (Sec. 97-9-61, Mississippi Code of 1972.)

_____ _____ ( ) –
Signature Date Telephone Number

Please note: The Mississippi Department of Revenue is required by law to conduct a study to test the assessment performance of each county. This study, called a "Sales Ratio Study", compares a sample of the actual sales price with its assessment. In order to accurately conduct this study, it is necessary that we collect data from you, the seller, of the following described property, so that we may qualify this sale as a "fair market" transaction. While your deed is a matter of public record, the particular details of each sale are not. We therefore ask that you answer each of the following questions as accurately as possible. Your answers will be used to determine if this sale can be used in this study. This information is for statistical purposes only and will not be used by the Dept. of Revenue for any other purpose.

MEASURING APPRAISAL ACCURACY

There are two major aspects of appraisal accuracy—level (measures of central tendency) and uniformity (measures of dispersion). Appraisal level refers to the overall ratio of appraised values to market values. It evaluates the tendency of assessments to be at, above, or below market value. The level provides information about the degree to which legal requirements are met. Uniformity relates to the fair and equitable treatment of individual properties. It addresses the degree of variability of assessments, whether tightly grouped near the average level of assessment or widely dispersed above and below.

After compiling a valid sample of sale prices, the next step of a ratio study is to divide appraised values by sale prices, multiply the result by 100 to calculate a set of appraisal ratios. These ratios tell you how well you did on each individual appraisal, but they don't measure your overall success.

$$\frac{\textbf{Appraised Value}}{\textbf{Sales Price}} \times 100 = \textbf{Sales Ratio}$$

CALCULATION OF THE SALES RATIO

(Round your answer to the nearest percent)

SALES REFERENCE	APPRAISED LAND VALUE	APPRAISED BUILDING VALUE	TOTAL APPRAISED VALUE	SALES PRICE	SALES RATIO
1	$ 5,500	$ 42,000	$ 47,500	$ 45,000	106
2	$ 6,500	$ 62,000	$ 68,500	$ 72,500	94
3	$ 15,000	$ --------	$ 15,000	$ 20,000	75
4	$ 8,000	$ 93,000	$ 101,000	$ 123,000	82
5	$ 7,100	$ 82,000	$ 89,100	$ 90,000	99
6	$ 8,000	$ 80,000	$ 88,000	$ 75,000	117
7	$ 20,000	$ 150,000	$ 170,000	$ 174,000	98
8	$ 4,000	$ 90,000	$ 94,000	$ 97,000	97
9	$ 25,000	$ 180,000	$ 205,000	$ 250,000	82
10	$ 7,500	$ --------	$ 7,500	$ 9,500	79
11	$ 4,000	$ 61,000	$ 65,000	$ 64,000	102
12	$ 20,000	$ --------	$ 20,000	$ 18,000	111
13	$ 4,700	$ 218,500	$ 223,200	$ 235,000	95
14	$ 25,000	$ 125,000	$ 150,000	$ 175,000	86
15	$ 9,000	$ 96,500	$ 105,500	$ 95,000	111

MEASURES OF CENTRAL TENDENCY

Measures of central tendency (uniformity) seek to describe in one convenient statistic the overall level at which property is appraised. They are called descriptive statistics because they describe certain characteristics about the properties used in a ratio study. Some measures of central tendency that are useful in describing assessment/ratio data are the median, the mean, and the weighted mean.

MEDIAN RATIO -- The median is the middle ratio when the ratios are arranged in either ascending or descending order. For appraisal purposes, most arrays are made in order of magnitude or ascending order. It divides the distribution into two groups, each containing an equal number of observations. That is, there are as many observations below the median as there are above. If the number of observations is even, the median is obtained by adding the two middle values and then dividing that sum by two.

The median is considered an unbiased estimator of the level of assessment, since it is not subject to the effects of outlying ratios. Because it discounts the effects of extreme ratios or outliers, the median is little affected by data errors, unlike other measures of central tendency. Outlier ratios are very low or high ratios as compared with others ratios in the sample. The preferred method of handling an outlier ratio is to subject it to additional scrutiny to determine whether the sale is a non-market transaction, a correctable error, or if the property reduces the representativeness of the sample. If a sale is found to be non-market, it should be excluded.

The median is also the base from which the coefficient of dispersion, the primary measure of appraisal uniformity, is calculated. The median is the preferred measure of central tendency in ratio study applications.

CALCULATION OF THE MEDIAN RATIO

SALES REFERENCE	APPRAISED LAND VALUE	APPRAISED BUILDING VALUE	TOTAL APPRAISED VALUE	SALES PRICE	SALES RATIO
3	$ 15,000	$ --------	$ 15,000	$ 20,000	75
10	$ 7,500	$ --------	$ 7,500	$ 9,500	79
9	$ 25,000	$ 180,000	$ 205,000	$ 250,000	82
4	$ 8,000	$ 93,000	$ 101,000	$ 123,000	82
14	$ 25,000	$ 125,000	$ 150,000	$ 175,000	86
2	$ 6,500	$ 62,000	$ 68,500	$ 72,500	94
13	$ 4,700	$ 218,500	$ 223,200	$ 235,000	95
8	$ 4,000	$ 90,000	$ 94,000	$ 97,000	97*
7	$ 20,000	$ 150,000	$ 170,000	$ 174,000	98
5	$ 7,100	$ 82,000	$ 89,100	$ 90,000	99
11	$ 4,000	$ 61,000	$ 65,000	$ 64,000	102
1	$ 5,500	$ 42,000	$ 47,500	$ 45,000	106
15	$ 9,000	$ 96,500	$ 105,500	$ 95,000	111
12	$ 20,000	$ --------	$ 20,000	$ 18,000	111
6	$ 8,000	$ 80,000	$ 88,000	$ 75,000	117

$$\frac{15 + 1}{2} = \frac{16}{2} = 8$$ **The eighth sale in the array (97) is the median ratio.**

MEAN RATIO -- The mean assessment ratio is simply the average of the ratios. It is found by adding the ratios and dividing that sum by the number of ratios in the study. It is the most common and well-understood measure of central tendency. The mean is dramatically affected by extreme values at the high or low end.

The mean accurately reflects the full magnitude of every ratio, which is desirable only if outliers are based on valid data and occur with the same frequency in both the sample and the population. Outliers particularly affect the mean in small samples.

Like the median, the mean is easy to compute and explain. It is widely used in statistics and is the basis of many other mathematical calculations. When the sample has been properly obtained and data carefully screened and processed, the mean provides a valid measure of the level of appraisal. It is important to realize that a mean of 100% does not necessarily indicate good assessment conditions.

CALCULATION OF THE MEAN RATIO

SALES REFERENCE	APPRAISED LAND VALUE	APPRAISED BUILDING VALUE	TOTAL APPRAISED VALUE	SALES PRICE	SALES RATIO
3	$ 15,000	$ --------	$ 15,000	$ 20,000	75
10	$ 7,500	$ --------	$ 7,500	$ 9,500	79
9	$ 25,000	$ 180,000	$ 205,000	$ 250,000	82
4	$ 8,000	$ 93,000	$ 101,000	$ 123,000	82
14	$ 25,000	$ 125,000	$ 150,000	$ 175,000	86
2	$ 6,500	$ 62,000	$ 68,500	$ 72,500	94
13	$ 4,700	$ 218,500	$ 223,200	$ 235,000	95
8	$ 4,000	$ 90,000	$ 94,000	$ 97,000	97
7	$ 20,000	$ 150,000	$ 170,000	$ 174,000	98
5	$ 7,100	$ 82,000	$ 89,100	$ 90,000	99
11	$ 4,000	$ 61,000	$ 65,000	$ 64,000	102
1	$ 5,500	$ 42,000	$ 47,500	$ 45,000	106
15	$ 9,000	$ 96,500	$ 105,500	$ 95,000	111
12	$ 20,000	$ --------	$ 20,000	$ 18,000	111
6	$ 8,000	$ 80,000	$ 88,000	$ 75,000	117

1,434

$$\frac{1{,}434}{15} = 95.6 \text{ or } 96 \quad \textbf{Mean Ratio}$$

WEIGHTED MEAN RATIO -- The weighted mean is another statistic that describes central tendency. It is the ratio of the total appraised values to the total sales prices. It weights each observation in proportion to its sale price, while the median and the mean give equal weight to each sale price. This weighting feature makes it without question the single most appropriate measure of the assessment level for estimating the full cash value of all real property in a particular stratum of properties, as might be done for equalization purposes. The weighted mean gives equal weight to each dollar of value in the sample, whereas the median and mean give equal weight to each parcel. The weighted mean is a requirement in the calculation of the price-related differential.

The major disadvantage of the weighted mean is its susceptibility to sampling error. An example of this is when a sample contains several properties of high value appraised at a different level from other properties in the sample.

CALCULATION OF THE WEIGHTED MEAN RATIO

SALES REFERENCE	APPRAISED LAND VALUE	APPRAISED BUILDING VALUE	TOTAL APPRAISED VALUE	SALES PRICE	SALES RATIO
3	$ 15,000	$ --------	$ 15,000	$ 20,000	75
10	$ 7,500	$ --------	$ 7,500	$ 9,500	79
9	$ 25,000	$ 180,000	$ 205,000	$ 250,000	82
4	$ 8,000	$ 93,000	$ 101,000	$ 123,000	82
14	$ 25,000	$ 125,000	$ 150,000	$ 175,000	86
2	$ 6,500	$ 62,000	$ 68,500	$ 72,500	94
13	$ 4,700	$ 218,500	$ 223,200	$ 235,000	95
8	$ 4,000	$ 90,000	$ 94,000	$ 97,000	97
7	$ 20,000	$ 150,000	$ 170,000	$ 174,000	98
5	$ 7,100	$ 82,000	$ 89,100	$ 90,000	99
11	$ 4,000	$ 61,000	$ 65,000	$ 64,000	102
1	$ 5,500	$ 42,000	$ 47,500	$ 45,000	106
15	$ 9,000	$ 96,500	$ 105,500	$ 95,000	111
12	$ 20,000	$ --------	$ 20,000	$ 18,000	111
6	$ 8,000	$ 80,000	$ 88,000	$ 75,000	117
			$1,449,300	$1,543,000	

1,449,300 = .939 = .94 X 100 = 94 Weighted Mean Ratio
1,543,000

MEASURES OF DISPERSION

Determining the quality of mass appraisal requires measuring uniformity (dispersion) between groups of properties and uniformity within groups. Uniformity between groups can be evaluated by comparing measures of appraisal level calculated for each group. Measuring uniformity within groups is more complex.

In small samples, the degree of uniformity can be seen by direct observation of the array. In larger samples, this is not possible, and you must quantify the degree of uniformity to evaluate the seriousness of any problem. Some of the measures of appraisal uniformity are interquartile average, average deviation, coefficient of dispersion about the median, standard deviation, and price-related differential (regressivity index).

INTERQUARTILE AVERAGE -- The interquartile average, while having similarities to a measure of central tendency, gives some indication of the uniform range of values on either side of the middle. It eliminates the high and low extremes. To calculate the interquartile average, divide the arrayed ratios into four equal parts called quartiles. Add the last ratio in the first quartile to the last ratio in the third quartile. Divide that sum by two. The result will be the interquartile average.

CALCULATION OF THE INTERQUARTILE AVERAGE

SALES REFERENCE	SALES RATIO	
3	75	
10	79	Q1
9	82	
4	82	
14	86	
2	94	Q2
13	95	
8	97	
7	98	
5	99	Q3
11	102	
1	106	
15	111	
12	111	Q4
6	117	

$$\frac{82 + 106}{2} = \frac{188}{2} = 94$$ **INTERQUARTILE AVERAGE**

AVERAGE DEVIATION – The average absolute deviation (or simply the average deviation) measures the average spread, or difference, between each value and a measure of central tendency (generally the median in assessment work). The term absolute indicates absolute value; that is, the direction of spread whether above or below a measure of central tendency is unimportant. The degree, or magnitude, of the differences is the significant aspect. The dispersion of a ratio study is evidently small if the values are clustered closely about the measure of central tendency; and large if the values are spread considerably.

To calculate the average deviation (median), find the difference between the median and each ratio in the study, ignoring the sign (+ or -) of the resultant. Total the results and divide that sum by the number of samples in the study.

CALCULATION OF THE AVERAGE DEVIATION (MEDIAN)

SALES REFERENCE	SALES RATIO	MEDIAN	ABSOLUTE DEVIATION
3	75	97	22
10	79	97	18
9	82	97	15
4	82	97	15
14	86	97	11
2	94	97	3
13	95	97	2
8	97	97	0
7	98	97	1
5	99	97	2
11	102	97	5
1	106	97	9
15	111	97	14
12	111	97	14
6	117	97	20
			151

$$\frac{151}{15} = 10.06666 = 10.07$$ **AVERAGE DEVIATION (MEDIAN)**

COEFFICIENT OF DISPERSION – In the assessment field, the most common measure of relative dispersion is the coefficient of dispersion (COD). It is based on how far each ratio differs from the median and is defined as the average percentage difference of the ratios from the median ratio. It is the single most useful measure of assessment variability. The COD should not be calculated about the mean, because the mean is more affected by extreme ratios than the median. It is always expressed as a percentage of the median.

To calculate the coefficient of dispersion about the median, divide the average deviation (median) by the median ratio. Multiply that figure by 100 to express the answer as a percent.

CALCULATION OF THE COEFFICIENT OF DISPERSION ABOUT THE MEDIAN

$$\frac{10.07}{97} = 0.1038144 \times 100 = 10.38 \text{ COD (MEDIAN)}$$

STANDARD DEVIATION -- The standard deviation is the primary measure of dispersion in scientific research and can be a powerful measure of appraisal uniformity. It is important because it is the most sensitive to the extreme ratios of any of the measures of dispersion to be used. It is a statistical measure of the spread or distance of ratios from the mean in the array. The standard deviation will almost always be higher than the average deviation. The lower the standard deviation, the less the differences are between each ratio and the mean ratio.

The standard deviation allows more weight to be given to the ratio figures the farthest away from the mean.

To calculate the standard deviation find the absolute difference of each sales ratio and the mean ratio. Square each of these differences and then add them. Divide this sum by one less than the number of samples used in the study. The square root of that number is the standard deviation.

CALCULATION OF THE STANDARD DEVIATION

SALES REFERENCE	SALES RATIO	MEAN	ABSOLUTE DIFFERENCE	DIFFERENCE SQUARED
3	75	96	21	441
10	79	96	17	289
9	82	96	14	196
4	82	96	14	196
14	86	96	10	100
2	94	96	2	4
13	95	96	1	1
8	97	96	1	1
7	98	96	2	4
5	99	96	3	9
11	102	96	6	36
1	106	96	10	100
15	111	96	15	225
12	111	96	15	225
6	117	96	21	441
				2,268

$$\sqrt{\frac{2{,}268}{15-1}} = \sqrt{\frac{2{,}268}{14}} = \sqrt{162} = 12.727 = 12.73$$ **STANDARD DEVIATION**

REGRESSIVITY INDEX – Regressivity Index is the ratio of the mean to the weighted mean. It also may be called the price-related differential (PRD). Assessments are considered progressive if higher priced properties are over-assessed in relation to lower priced properties. An example is if most $100,000 properties are appraised at $80,000 (80%) while $50,000 are appraised at $30,000 (60%). The opposite situation would be considered regressive. If this ratio is greater than 1.08, it is usually a good indication of assessment regressivity. On the other hand, if this ratio is less than .92, it is a good indication of assessment progressivity.

To calculate the regressivity index, simply divide the mean by the weighted mean.

CALCULATION OF THE REGRESSIVITY INDEX

$$\frac{\textbf{Mean}}{\textbf{Weighted Mean}} = \frac{\textbf{96}}{\textbf{94}} = \textbf{1.02}$$ **Regressivity Index**

Section 27-35-113, Miss. Code Ann., provides that the Department of Revenue shall establish performance standards of the accuracy of ad valorem assessments.

It shall be the duty of the Department of Revenue to carefully examine the recapitulations of the assessment rolls of the counties, when received, to compare the assessed valuation of the various classes of property in the respective counties, to investigate and determine if the assessed valuation of any classes of property in any one or more counties of the state is not equal and uniform with the assessed values fixed upon the same classes of property in other counties of the state, and to ascertain if any class of property in any one or more counties is assessed contrary to law.

The Department of Revenue shall, by regulation, establish performance standards and acceptable parameters for evaluation of the accuracy of assessments. These standards shall include, but not be limited to, the following:

(a) Assessment level: The ratio of assessments to current true value or market value;
(b) Assessment uniformity: The test of uniformity or fairness of individual assessments; and
(c) Assessment equity: The test of price-related bias.

The Department of Revenue shall annually conduct assessment/ratio studies of each county or utilize other means, as determined by the Department of Revenue, to determine if each county's assessment records comply with acceptable performance standards. The Department of Revenue shall send notice of the results of this examination to the assessor and the board of supervisors of each county no later than thirty (30) days after receipt of the board of supervisors' recapitulation. Any county not in compliance with the acceptable performance standards shall, within ninety (90) days of the Department of Revenue's order, adopt and submit to the Department of Revenue for approval a plan for achieving compliance and begin the implementation of the plan so that compliance can be achieved by the second succeeding year's assessment roll after the tax year for which the Department of Revenue's initial order was directed. Failure to adopt and submit an approved plan for achieving compliance or failure to properly implement and follow an approved plan shall cause the Department of Revenue to withhold the county's homestead exemption reimbursement monies until such time as the county has complied with this provision. In the event the county has not complied with this provision by the end of the state's fiscal year, then the Department of Revenue shall place the funds so held in a special escrow account. All interest shall accrue to the benefit of the county on this account.

The Department of Revenue shall approve the property tax rolls of any county operating under a supervised plan to achieve compliance within the first two (2) roll years as provided for in the paragraph above, notwithstanding that the county may be failing a test or tests of the accuracy or equity of assessment.

Any county failing to achieve such compliance for the second succeeding year's assessment roll as outlined above shall be subject to the following restrictions until such time as said tax rolls come into compliance:

(a) The Department of Revenue shall place into escrow all homestead exemption reimbursements;

(b) The county shall levy and pay over to the Department of Revenue, for purposes of being placed in the escrow account, the proceeds of the one (1) mill levy provided for in Section 27-39-329 (2)(b). All interest shall accrue to the benefit of the county on any funds placed in an escrow account; and

(c) The Department of Revenue shall identify the class or classes of property whose assessment level is not in conformity with the regulation of the Department of Revenue governing same, and shall have the authority to adjust and equalize that class or classes of property by, either requiring a fixed percent (1) to be added to the assessed valuation of any class of property in any county found too low; or (2) to be deducted from the assessed valuation of any class of property found too high; in order that the class or classes of property are being assessed in conformity with the Department of Revenue's regulation.

Once the county achieves compliance with the standards of performance as to the assessment level, uniformity and equity as established by the rules and regulations of the Department of Revenue, the DOR shall release to the county all funds held in escrow on its behalf during the period of noncompliance.

The board of supervisors of any county aggrieved by any order of the Department of Revenue may appeal such order to the Mississippi Board of Tax Appeals within thirty (30) days after the mailing of such order to the board. The Board of Tax Appeals shall hear the objections by the board of supervisors and may either affirm its order or rescind its order; however, the Board of Tax Appeals shall not have the authority to grant relief which is inconsistent with this section. The decision of the Board of Tax Appeals shall be final.

It is the intent of Section 27-35-113 to vest the Department of Revenue with authority to investigate and determine the assessed valuation of classes of property, and to further establish and/or clarify that tax assessors and the boards of supervisors are vested with the absolute authority to investigate and determine the assessed valuations of individual parcels of property located in their particular county in a manner consistent with the laws of this state.

Basic Principles

Measuring appraisal accuracy and measuring appraisal uniformity have been discussed in the preceding pages, but they have not said anything about the steps you must make to find the cause of inaccuracy or high dispersion. A number of factors can create flawed results; not all of these factors lie in the mass appraisal system itself. Before you adjust your schedules (either for land, improvements, or depreciation), you must determine if they are in fact the cause of the problem.

To do so, you must further analyze sales ratios. Thus far, you have looked only at the final ratio itself. At this stage, you must add property information and sort ratios according to property features. This sorting process will enable you to determine whether your system is showing bias. BIAS is a systematic deviation from a desired result that arises when a system ignores or inadequately accounts for a significant variable. A mass appraisal system aims to predict market value; its desired result is to estimate 100% of that value. Bias arises from some feature of your mass appraisal system that makes it incompatible with the market that it is supposed to describe.

Title 35, Part VI, Subpart 02, Chapter 06, Mississippi Administrative Code provides that the following shall be the standards used for ratio studies:

1. A standard (acceptable limits) for overall assessment performance, i.e., compliance with statutory assessment level.

2. A standard for uniformity and equality of overall assessments.

3. A standard for price related assessment bias.

Each standard and its range of acceptability are explained as follows:

1. **Ratio:** The standard for passing the assessment level test for Class I properties is a median ratio of 85 percent (85%) to 115 percent (115%) of market value. A median for Class II properties of 75 percent (75%) to 125 percent (125%) of market value is deemed passing.

2. **Standard of Uniformity and Equality:** It is generally recognized that the coefficient of dispersion about the median is the most accurate indicator of uniformity and equality. The standard for passing the assessment uniformity test is a coefficient of dispersion about the median of 20 percent (20%) or less.

3. **Price Related Assessment Bias:** The standard for passing the price related bias test is an index range of .92 to 1.08.

CONSTRUCTION OF A COST INDEX STUDY

The most accurate method of determining local costs is through new structures of known costs. Simply stated, a cost index brings values in the appraisal manual up to current costs. One of the first steps is to identify as many and diverse new structures as possible in a given county. This includes (but is not limited to) residences, barns, detached utility buildings, detached garages and carports, and commercial structures. Try to get as many different classes of residences and commercial structures as possible.

The index study should reflect the study area (county) for which the study is being prepared. The study should be indicative of the building activity taking place within the county. The study should contain several different classes of houses, commercial properties, secondary improvements, rural structures etc.

We are seeking to find PURE COST in an index study. That is, cost to construct the building, which is free from added costs inherent in most real estate sales (i.e. various closing costs, real estate commissions, seller's concessions, and unusual financing charges).

Other items that should be excluded from the construction cost may be driveways, septic tanks/treatment plants, water wells, or any item, which added to the cost and may not be part of the construction cost of the basic dwelling.

The best source of information regarding new construction cost is to contact the builder of that dwelling. Construction costs should include the builder's profit. If you contact the builder who has constructed the dwelling he will know this information first hand. Suppose that you are looking at a property that has recently been constructed, and you meet with the contractor and he tells you that the owner of the new residence is finishing all the interior work, this sample should be deleted from your index study. This is a common occurrence, and each sample in the study should be verified to insure that this did not happen.

Homestead exemption applications should be a good source of locating most new residences. Building contractors and loan officers may provide information to be used in developing an index. Again, include that portion of the builder's profit attributable to the building.

All index studies should consist of a perimeter drawing on a property record card with all the information necessary to price the building. Calculate the value of the building according to the State Appraisal manual without using any building index factor, market or location units. That is the base cost which is referred to as the " 100 index." This figure is divided into the actual cost of the building to arrive at a current cost index. A 35mm color photo should accompany the property record card for each case under study.

The index figure in the building calculation formula is the factor that measures inflation or appreciation occurring from market changes. The condition (% good) factor measures the deflation, or depreciation occurring from physical, functional, or economic (external) factors.

Statistical measures of central tendency and dispersion should be used as a tool for testing the accuracy of the selected building index. These measures include ratio calculations for the mean, median, mode, average deviation, coefficient of dispersion about the median, and standard deviation. The median index should be used as the county index. All measures of central tendency should be within five percent (5%) to be an acceptable index.

Before validation of the selected index it must be tested against actual sales of improved properties within the jurisdiction to verify its accuracy. Even though the index is not applied to land, it is extremely important that the land values are updated and are accurate so that the combination of both reflects market value.

COST INDEX STUDY
DEMONSTRATION 1

REFERENCE NUMBER	CLASS	CONSTRUCTION COST	100 INDEX VALUE	INDICATED INDEX
1	H/C+	$ 346,800	$ 256,879	1.35
2	H/A	$ 699,500	$ 507,268	1.38
3	L/D-	$ 81,000	$ 68,750	1.18
4	L/C-	$ 100,000	$ 89,341	1.12
5	H/C-	$ 165,000	$ 131,070	1.26
6	H/D	$ 125,500	$ 95,389	1.32
7	H/D+	$ 160,000	$ 118,186	1.35
8	H/C	$ 280,000	$ 198,199	1.41
9	L/D+	$ 95,000	$ 64,290	1.48
10	H/C	$ 255,000	$ 168,184	1.52
11	H/D	$ 106,000	$ 65,519	1.62
12	H/C-	$ 157,500	$ 109,963	1.43
13	H/D+	$ 139,000	$ 94,936	1.46
14	H/C-	$ 151,000	$ 107,804	1.40
15	H/D-	$ 92,250	$ 71,396	1.29
16	H/B	$ 481,500	$ 325,283	1.48

COST INDEX STUDY
DEMONSTRATION 2

REFERENCE NUMBER	INDICATED INDEX		MEDIAN	ABSOLUTE DEVIATION
4	1.12		1.39	.27
3	1.18	Q1	1.39	.21
5	1.26		1.39	.13
15	1.29		1.39	.10
6	1.32		1.39	.07
7	1.35	Q2	1.39	.04
1	1.35		1.39	.04
2	1.38		1.39	.01
14	1.40		1.39	.01
8	1.41	Q3	1.39	.02
12	1.43		1.39	.04
13	1.46		1.39	.07
16	1.48		1.39	.09
9	1.48	Q4	1.39	.09
10	1.52		1.39	.13
11	1.62		1.39	.23
				1.55

COST INDEX STUDY
DEMONSTRATION 3

REFERENCE NUMBER	INDICATED INDEX		MEAN	ABSOLUTE DIFFERENCE	DIFFERENCE SQUARED
4	1.12		1.38	.26	.0676
3	1.18	Q1	1.38	.20	.0400
5	1.26		1.38	.12	.0144
15	1.29		1.38	.09	.0081
6	1.32		1.38	.06	.0036
7	1.35	Q2	1.38	.03	.0009
1	1.35		1.38	.03	.0009
2	1.38		1.38	.00	.0000
14	1.40		1.38	.02	.0004
8	1.41	Q3	1.38	.03	.0009
12	1.43		1.38	.05	.0025
13	1.46		1.38	.08	.0064
16	1.48		1.38	.10	.0100
9	1.48	Q4	1.38	.10	.0100
10	1.52		1.38	.14	.0196
11	1.62		1.38	.24	.0576
					.2429

MEDIAN 1.39

MEAN $\frac{22.05}{16} = 1.3781 = 1.38$

INTERQUARTILE AVERAGE $\frac{Q1 + Q3}{2} = \frac{1.29 + 1.38}{2} = \frac{2.67}{2} = 1.34$

AVERAGE DEVIATION $\frac{1.55}{16} = .0969$

COEFFICIENT OF DISPERSION ABOUT THE MEDIAN $\frac{.0969}{1.39} \times 100 = 6.97$

STANDARD DEVIATION $\sqrt{\frac{0.2429}{16-1}} = \sqrt{\frac{0.2429}{15}} = \sqrt{.0161933} = 0.12725$

$= 0.13$

GLOSSARY

Absolute Deviation: In an array, the absolute value of the difference between a sample point and the median. For assessment purposes, the median ratio is the central tendency used to calculate the Coefficient of Dispersion.

Absolute Value or Number: The value of a number regardless of its sign. For example: 3 and -3 both have an absolute value of 3.

Ad Valorem: Tax levied according to value. The amount of tax is based on the value of the property.

Arm's Length Transaction: A transaction freely arrived at in an open market, unaffected by abnormal pressure or by the absence of normal competitive negotiations, as might be true in the case of a transaction between related parties.

Assessment Ratio: The assessed value divided by the true value equals the assessment ratio.

Assessed Value: The true value times the assessment ratio equals the assessed value.

Average Absolute Deviation: The average of the absolute deviation in the array.

Average Deviation: A measure of dispersion computed by dividing the total of absolute deviations by the number of sales in the sample.

Central Tendency: The tendency of most kinds of data to cluster around some type or central value, such as a median or mean.

Coefficient of Dispersion (COD): The COD facilitates comparison of the deviation or dispersion about different sized medians. It is the ratio of the average absolute deviation to the median. The average deviation is converted to a percentage.

Current Assessment Roll: The roll in preparation for the tax year that lists the properties identified as of January 1.

Date of Sale: Date conveyance instrument was signed and notarized, signifying the date that sale price or terms were agreed upon between the buyer and seller.

Warranty Deed: A legal instrument in writing that, when properly executed and delivered, conveys an estate or interest in real property. A warranty deed provides the greatest amount of protection compared to other deed types.

Deviation: The difference between the selected ratio (central tendency) and the individual ratios in an array.

Equity: The degree to which assessment bears a consistent relationship to real market value.

Grantee (Buyer): A legal party to which property is transferred by deed or other instruments.

Grantor (Seller): A legal party who transfers property by deed or grants property rights through any other instrument.

Index: A number, usually expressed as a percentage, used to measure change such as a construction cost index.

Mass Appraisal: A method of appraising a large number of properties at one time by adopting standard techniques, giving due consideration to the valuation process so that uniformity and equity of values can be achieved between all properties.

Mean: The result of adding all the values of a variable and dividing by the number of values.

Measures of Central Tendency: A descriptive in one convenient statistic the overall level at which property is appraised. Some measures of central tendency that are useful in describing assessment/ratio data are the median, the mean, and the weighted mean.

Median: A measure of central tendency calculated by determining the exact middle ratio in an array. The value of the middle item where an odd number of items are arrayed according to size; or the arithmetic average of the two central items, if there is an even number of items.

Mode: A ratio that occurs most frequently in a ratio array.

Multiple Listing Service (MLS): A commercial service that provides a system that pools the price listings of all member real estate companies, for a fee.

Outlier: An observation that has an unusual value, that varies widely from a measure of central tendency. Some outliers occur naturally, others may be due to data error.

Personal Property: Any property that is not realty; all moveable items not permanently affixed to or part of real estate. *Chattels*

Population: All the properties in an appraisal area, market area, or study area.

Price related differential (PRD): The price-related differential is a measurement of assessment regressivity and progressivity. *See regressivity and progressivity.*

Progressivity: Appraisals are considered progressive where high-valued properties are over-appraised relative to low-valued properties.

Ratio: Relational value in number or degree between two similar things. The relative size of two quantities expressed as the quotient of one divided by the other.

Ratio Study: This study estimates the percentage relationship between (1) the total prior year's real market value of taxable property on the prior assessment roll and (2) the total current real market value of the same properties in each property class countywide.

Real Property: An identified parcel or tract of land including any improvements.

Recordation Date: The calendar date and time of day that the written evidence of a completed transaction became of public record or notice in the county where the real property is located. This date and time are the critical elements which establish priority in the chain of title of a property.

Regressivity: Appraisals are considered regressive where high-valued properties are under-appraised relative to low-valued properties.

Sales Array: A grouping of sales listed in ascending order according to the size of the ratio.

Sales List: A listing of all sales used in the ratio study.

Sale Price: The price at which the property actually sold.

Sales Ratio: The percentage relationship between the total appraised value from the assessment roll and the selling price for a particular property. This can be expressed as a percent or decimal. The common practice is to express the ratio as a whole number.

Sales Ratio Study: A statistical compilation of sales ratios designed to produce an indication of the real market value ratio of each property class.

Sample: A set of observations selected from a population.

Standard Deviation: A measure used to check the variation of the sample from the mean. The statistic calculated from a set of numbers by subtracting the mean from each value and squaring the remainders, adding together these squares, dividing by the size of the sample less one, and taking the square root of the result.

Tax Year: The period for which the property is taxed.

Title: The union of all elements that constitute proof of ownership. It is the evidence that the owner is in legal possession of the property.

True Value: "True value shall mean and include, but shall not be limited to, market value, cash value, actual cash value, proper value and value for the purposes of appraisal for ad valorem taxation." Mississippi Code Ann. 27-35-50-(1)

Usable Sale: A sale used in a ratio study that meets the criteria for an arm's length transaction.

Weighted Mean: The ratio of the total appraised value to the total sales price. It weights each observation in proportion to its sale price and is a requirement in the calculation of the price-related differential.